



OFFICE OF ENVIRONMENTAL SERVICES

Statement of Basis

**Minor Source Air General Permit
Crude Oil and Natural Gas Production**

PROPOSED MODIFICATION

AGENCY INTEREST NO. 158873
ACTIVITY NO. PER20120001

PERMITTING AUTHORITY

Louisiana Department of Environmental Quality
Office of Environmental Services
P.O. Box 4313
Baton Rouge, Louisiana 70821-4313

CONTACT INFORMATION

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I. STATEMENT OF AUTHORITY – LAC 33:III.513.A

1. The permitting authority may issue a general permit intended to cover numerous similar sources or activities. General permits shall be issued in accordance with LAC 33:III.519 and, prior to issuance, shall undergo public notice. Each general permit shall incorporate terms and conditions applicable to sources that would qualify for the general permit. Any general permit shall identify criteria by which sources may qualify for the general permit, and may provide for applications which deviate from the requirements of LAC 33:III.517.
2. The owner or operator of any source that would qualify for the general permit may apply for authorization to operate under the general permit. The application must include all information necessary to determine qualification for and to assure compliance with the general permit.
3. The permitting authority may approve an owner or operator's application for authorization to operate under the general permit without repeating the public participation procedures. Such an approval shall not be a final permit action for purposes of judicial review regarding the terms and conditions of the general permit.
4. Any source which is issued the general permit shall, notwithstanding a permit shield, be subject to enforcement action for operation without a permit if the source is later determined not to qualify for the general permit.

II. DEFINITIONS

Selected terms used in the Minor Source Air General Permit for Crude Oil and Natural Gas Production are defined below.

Amine Sweetening Unit—a process device that separates the H₂S and CO₂ contents from the sour natural gas stream.

Condensate—hydrocarbon liquid separated from natural gas that condenses due to changes in the temperature or pressure, or both, and remains liquid at standard conditions.

Custody Transfer—the transfer of produced petroleum and/or condensate, after processing and/or treatment in the producing operations, from storage vessels or automatic transfer facilities to pipelines or any other forms of transportation.

Flare Gas—a combination of fuel gas, used to operate any pilot for a flare, and one or more combined waste streams routed to the flare for control by combustion.

Flash Gas—VOC emissions from depressurization of crude oil or condensate when it is transferred from a higher pressure to a lower pressure tank, reservoir, or other container.

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Flash gas may be emitted to the atmosphere from tanks, reservoirs, process vessels, separators, or other process equipment. Emissions from sampling and maintenance activities are not included.

Gas-Condensate-Glycol (GCG) separator—a two- or three-phase separator through which the “rich” glycol stream of a glycol dehydration unit is passed to remove entrained gas and hydrocarbon liquid. The GCG separator is commonly referred to as a flash separator or flash tank.

Gas-to-Oil Ratio (GOR)—the number of standard cubic meters of gas produced per liter of crude oil or other hydrocarbon liquid.

Glycol Dehydration Unit—a device in which a liquid glycol (including, but not limited to, ethylene glycol, diethylene glycol, or triethylene glycol) absorbent directly contacts a natural gas stream and absorbs water in a contact tower or absorption column (absorber). The glycol contacts and absorbs water vapor and other gas stream constituents from the natural gas and becomes “rich” glycol. This glycol is then regenerated in the glycol dehydration unit reboiler. The “lean” glycol is then recycled.

Glycol Dehydration Unit Process Vent—the glycol dehydration unit reboiler vent and the vent from the GCG separator (flash tank), if present.

Glycol Dehydration Unit Reboiler Vent—the vent through which exhaust from the reboiler of a glycol dehydration unit passes from the reboiler to the atmosphere or to a control device.

Natural Gas Liquids—the hydrocarbons, such as ethane, propane, butane, and pentane, that are extracted from field gas.

Natural Gas Processing Plant—any processing site engaged in the extraction of natural gas liquids from field gas, fractionation of mixed natural gas liquids to natural gas products, or both.

Nonfractionating Plant—any gas plant that does not fractionate mixed natural gas liquids into natural gas products.

Storage Vessel with the Potential for Flash Emissions—any storage vessel that contains a hydrocarbon liquid with a stock tank GOR equal to or greater than 0.31 cubic meters per liter and an API gravity equal to or greater than 40 degrees and an actual annual average hydrocarbon liquid throughput equal to or greater than 79,500 liters [500 barrels] per day.

III. POTENTIALLY APPLICABLE REQUIREMENTS

Potentially applicable regulations, as well as any additional monitoring, recordkeeping, and reporting requirements necessary to demonstrate compliance with both the federal and state terms and conditions of the general permit, are provided in the “Specific

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Requirements” section of the general permit. Associated with each Specific Requirement is a citation of the federal or state regulation upon which the authority to include that Specific Requirement is based.

A. Federal Regulations

40 CFR 60 – New Source Performance Standards (NSPS)

Portions of the following subparts are potentially applicable to an eligible facility:

- Subpart KKK – Standards of Performance for Equipment Leaks of VOC From Onshore Natural Gas Processing Plants for Which Construction, Reconstruction, or Modification Commenced After January 20, 1984, and on or Before August 23, 2011

In accordance with 40 CFR 60.633(d), pumps in light liquid service, valves in gas/vapor and light liquid service, and pressure relief devices in gas/vapor service that are located at a non-fractionating plant that does not have the design capacity to process 10 million standard cubic feet per day or more of field gas are exempt from the routine monitoring requirements of §60.482–2(a)(1), §60.482–7(a), and §60.633(b)(1).

- Subpart LLL – Standards of Performance for Onshore Natural Gas Processing: SO₂ Emissions for Which Construction, Reconstruction, or Modification Commenced After January 20, 1984, and on or Before August 23, 2011

Amine sweetening units eligible to be covered under the general permit must have a design capacity less than 2 long tons per day (LT/D) of H₂S expressed as sulfur.

- Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines
- Subpart JJJJ – Standards of Performance for Stationary Spark Ignition Internal Combustion Engines
- Subpart OOOO – Standards of Performance for Crude Oil and Natural Gas Production, Transmission, and Distribution

Per 40 CFR 60.5365(b) and (c), centrifugal and reciprocating compressors located at a well site, or an adjacent well site and servicing more than one well site, are not affected facilities under Subpart OOOO.

In accordance with 40 CFR 60.5401(d), pumps in light liquid service, valves in gas/vapor and light liquid service, and pressure relief devices in gas/vapor service that are located at a nonfractionating plant that does not have the design capacity to process 10 million standard cubic feet per day or more of field gas are exempt from the routine monitoring requirements of §§60.482–2a(a)(1) and 60.482–7a(a), and §60.5401(b)(1).

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Applicability of Subparts KKK and OOOO to Joule-Thomson (J-T) Equipment

Use of compressors associated with J-T equipment and intended to aid in the removal of condensates from a gas stream or to move the liquids or remaining gas from the process may constitute “extraction of natural gas liquids” and subject this portion of the process to the requirements of 40 CFR 60 Subpart KKK or Subpart OOOO.¹ Such facilities are eligible for coverage under the general permit, provided the following conditions are satisfied:

1. The operation is a non-fractionating plant that does not have the design capacity to process 10 million standard cubic feet per day or more of field gas;
2. If the facility commenced construction, reconstruction, or modification after January 20, 1984, and on or before August 23, 2011, the owner or operator complies with all applicable requirements of 40 CFR 60 Subpart KKK;
3. If the facility commenced construction, reconstruction, or modification after August 23, 2011, the owner or operator complies with all applicable requirements of 40 CFR 60 Subpart OOOO; and
4. Where Subpart KKK or §60.5400 of Subpart OOOO is applicable, the owner does not comply by routing emissions to a control device.

Forced extraction processes include Cryogenic-Joule-Thomson, Refrigerated Absorption and Cryogenic-Joule-Thomson, Refrigeration and Cryogenic-Joule-Thomson, Cryogenic-Joule-Thomson and Expander, and similar processes.

J-T equipment that relies on existing gas pressure and temperature and that does not require additional gas compression to remove condensates from the gas stream or to move hydrocarbon liquids or remaining gas from the process are also allowed. This process does *not* trigger the leak detection and repair program under 40 CFR 60 Subpart KKK.

40 CFR 61 – National Emission Standards for Hazardous Air Pollutants (NESHAP)

No NESHAP provisions are potentially applicable to an eligible facility.

40 CFR 63 – Maximum Achievable Control Technology (MACT)

Portions of the following subparts are potentially applicable to an eligible facility:

- Subpart HH – National Emission Standards for Hazardous Air Pollutants From Oil and Natural Gas Production Facilities

¹ See applicability determination from Jeff KenKnight of EPA to Randy Poteet of ConocoPhillips dated November 11, 2004, concerning the Alpine Central Processing Facility.

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Facilities with triethylene glycol (TEG) dehydration units must be exempt from the control requirements of Subpart HH in order to be eligible for coverage under the general permit.

According to 40 CFR 63.764(e), the owner or operator is exempt from these requirements if:

- (i) The actual annual average flowrate of natural gas to the glycol dehydration unit is less than 85 thousand standard cubic meters per day as determined by the procedures specified in §63.772(b)(1); or
 - (ii) The actual average emissions of benzene from the glycol dehydration unit process vent to the atmosphere are less than 0.90 megagram per year as determined by the procedures specified in §63.772(b)(2).
- Subpart ZZZZ – National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

New Source Review (NSR)

Because potential facility-wide emissions must be less than the thresholds set forth in Section III of the general permit, eligible facilities are not classified as major stationary sources under the Prevention of Significant Deterioration (PSD) or Nonattainment New Source Review (NNSR) programs.

B. State Regulations

All or part of the following sections of LAC 33:III are potentially applicable to an eligible facility:

- 501 – Scope and Applicability
- 919 – Emissions Inventory
- 1101 – Control of Air Pollution from Smoke
- 1105 – Smoke from Flaring Shall Not Exceed 20 Percent Opacity
- 1107 – Exemptions
- 1305 – Control of Fugitive Emissions
- 1311 – Emission Limits
- 1313 – Emissions from Fuel Burning Equipment
- 1513 – Recordkeeping and Reporting
- 2103 – Storage of Volatile Organic Compounds
- 2104 – Crude Oil and Condensate
- 2111 – Pumps and Compressors
- 2115 – Waste Gas Disposal
- 2116 – Glycol Dehydrators
- 2201 – Affected Facilities in the Baton Rouge Nonattainment Area and the Region of Influence

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LAC 33:III.2115

LAC 33:III.2115 applies to waste gas streams located at facilities that have the potential to emit 25 TPY or more of VOC in the parishes of Ascension, East Baton Rouge, Iberville, Livingston, and West Baton Rouge; 50 TPY or more of VOC in the parishes of Calcasieu and Pointe Coupee; or 100 TPY or more of VOC in any other parish.

Based on the maximum facility-wide emissions authorized by the general permit, only waste gas streams located at facilities in Calcasieu Parish and Pointe Coupee Parish could be subject to the rule.

Eligible facilities located in these parishes and generating waste gas streams must not be subject to the control requirements of this rule. Records demonstrating that the criteria are being met for any exemption claimed must be maintained.

LAC 33:III.Chapter 22

ICEs subject to LAC 33:III.2201 are eligible for coverage under the permit provided that a chemical reagent (e.g., ammonia) is **not** used for the reduction of NO_x and the facility does **not** comply with Chapter 22 by means of a ton per day or pound per hour cap as allowed by §2201.D.4 or a facility-wide averaging plan as described in §2201.E.1.

Diesel-fired ICEs are exempt from the provisions of Chapter 22 per §2201.C.14.

LAC 33:III.Chapter 51

Eligible facilities must be minor sources of LAC 33:III.Chapter 51-regulated toxic air pollutants (TAP). Facilities which were a major source of TAP as of December 20, 1991, but which have subsequently achieved minor source status through reduction of emissions and potential to emit, are eligible for coverage under the general permit, but must comply with the provisions of LAC 33:III.5105.A.1, 3, and 4, and 5113 as outlined in the Specific Requirements. Pursuant to LAC 33:III.905, the owner or operator shall use and diligently maintain in proper working order the control equipment installed to reduce the facility's potential to emit below the major source threshold whenever any emissions are being made which can be controlled by the facilities, even though the ambient air quality standards in affected areas are not exceeded.

The following sections of LAC 33:III are applicable to all eligible facilities:

- 1103 – Impairment of Visibility on Public Roads Prohibited
- 1303 – Provisions Governing Specific Activities
- 2113 – Housekeeping
- 5611 – Standby Plans to be Submitted When Requested by the Administrative Authority

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The following sections of LAC 33:III are *not* applicable to all eligible facilities:

- 2121 – Fugitive Emission Control
- 2122 – Fugitive Emission Control for Ozone Nonattainment Areas and Specified Parishes

As discussed above, facilities using J-T equipment as part of a “forced” process may be subject to 40 CFR 60 Subpart KKK or Subpart OOOO. However, LAC 33:III.2121 and LAC 33:III.2122 are not applicable to facilities eligible for coverage under the permit, as LAC 33:III.2121.C.4.g and LAC 33:III.2122.D.4.f specify that monitoring is not required at natural gas processing plants with a capacity less than 40 million cubic feet per day that do not fractionate natural gas liquids.

IV. IMPACTS ON AMBIENT AIR

Emissions limitations associated with the general permit were reviewed by the department to ensure compliance with the National Ambient Air Quality Standards (NAAQS) for criteria pollutants and the Louisiana Ambient Air Standards (AAS) for toxic air pollutants. Modeling demonstrates that emissions from facilities authorized to operate under the general permit will not violate NAAQS and AAS. Therefore, such facilities will not cause air quality impacts which could adversely affect human health or the environment.

V. COASTAL USE PERMITS

Executive Order No. BJ 2008-7 directs all state agencies to administer their regulatory practices, programs, contracts, grants, and all other functions vested in them in a manner consistent with Louisiana’s Comprehensive Master Plan for a Sustainable Coast and public interest to the maximum extent possible. If a proposed facility is located in the Coastal Zone, LDEQ requires the applicant to document whether or not a Coastal Use Permit is required, and if so, whether it has been obtained. Coastal Use Permits are issued by the Coastal Management Division of the Louisiana Department of Natural Resources (LDNR).

VI. PERMIT HISTORY

Initial Issuance

The Minor Source Air General Permit for Crude Oil and Natural Gas Production was first issued on August 29, 2010, with an effective date of September 15, 2010.

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Request for public comment on the proposed general permit was published in *The Advocate*, Baton Rouge; *The Times-Picayune*, New Orleans; *The News Star*, Monroe; the *American Press*, Lake Charles; *The Times*, Shreveport; *The Advertiser*, Lafayette; the *Alexandria Daily Town Talk*, Alexandria; and *The Courier*, Houma on November 25, 2009. All comments received were considered prior to a final permit decision.

First Modification

The general permit was first modified on May 17, 2011, to incorporate the amendments to 40 CFR 63 Subpart ZZZZ promulgated on August 20, 2010 (75 FR 51588), and March 9, 2011 (76 FR 12863); and the revisions to LAC 33:III.Chapter 11 promulgated on April 20, 2011 (AQ310).

Request for public comment on the proposed modifications was published in *The Advocate*, Baton Rouge; *The Times-Picayune*, New Orleans; *The News Star*, Monroe; the *American Press*, Lake Charles; *The Times*, Shreveport; *The Advertiser*, Lafayette; *The Town Talk*, Alexandria; and *The Courier*, Houma on April 8, 2011. No comments were received.